Village Wastewater Advisory Committee

Summary of Findings and Recommendations

Prepared for the Village Planning Commission
11-24-15

The following Opening Remarks were provided by Mr. Mike Kaplan on behalf of the Wastewater Advisory Committee

Good evening.

Thank you for coming this evening, and thank you for your support and interest in what the Committee and the Commission have been working on. I've got just a few things to share, and then I will turn this over to Bill Clifton for our presentation.

We know that all of us have been concerned and anxious about everything to do with this topic for a long time. We are all concerned about what is going to happen, and what it's going to cost, and what it's going to mean to how we've lived. We understand that a lot of this is very scary for all of us.

So let me be very very clear about what we have learned.

1. The Village CAN manage its future -- if we move to do so now, and don't wait to be forced to do it. If we wait to be forced into it, we will lose control of our own future.

2. We all know that there are many homes and businesses downtown that do not adequately manage their waste water.

3. ***We can, as a community, solve this problem once and for all, in a way WE decide, at a price we can afford, and without tearing up downtown and destroying all our roads and our yards, and without building an ugly, smelly, noisy treatment plant that no one will want to live near, work near or play near. We can do all of that.***

4. The governmental agencies in charge are interested in just one thing – a system that works. As long as we adopt an appropriate plan now and as long as we comply with their technical specifications for the end water, we will have complied with their rules.

5. Put another way, as long as our waste water gets cleaned up, we can pick the system we want. But we will need to pass their tests, now and in the future.

6.We need to meet their standards, AND WE CAN.

7. We know this because we have gone to, and met with, and seen, other towns in Ohio, which are subject to the same government controls, and they have been able to create their own chosen system, at a price they can afford, in a way that they chose, and without turning their town into a sewer plant.

8. We've learned from all of these other towns and we've learned what can be done to control our own future.

9. ***Now is the time to decide*** *if we take control -- or if we wait for the government to come and decide for us. Because we also know -- from seeing communities that waited -- that when the government comes, we will have lost our chance to do it our way.*

10. If the Village does not move forward, some time -- probably within the next 5 years – we will receive the same type of enforcement directive that Norton and Clinton have received. If that happens, then THEY will select the system, they will decide what the price is, and they won't care a bit about tearing up our town in the process. We will lose everything we have to gain by acting now.

THEREFORE

1. We recommend that we continue what we have started.

2. We recommend that we follow the models that the other small towns that we have met with have followed.

3. Right now, that means that we need to send out a REQUEST FOR QUALIFICATIONS to look for the right engineering company. A company that will be the best qualified to design the system we want, at a price we can afford, and that will also help us find money to pay for it.

The first thing that we will be seeing from the engineering company we select will be a "Preliminary Engineering Study." You'll hear more about that in a few minutes in the Committee's presentation.

4 And also, right now, we need to submit funding requests to help us pay for that Preliminary Engineering Study so that we can take the first steps to getting money from agencies and programs that the Committee has located who pay for this kind of thing.
Sending in the requests doesn't cost us anything, doesn't commit us to the project, and it doesn't mean we even have to take the money if we decide not to. But unless we ask, they can't say YES. And getting their money beats the heck out of spending ours.

Now, we want to get down into the details with you about what the Committee has done so far, and how we've come to make these recommendations. Here is Bill Clifton to guide us through the presentation.

Village Wastewater Advisory Committee

Summary of Findings and Recommendations

11-24-15

Mr. Bill Clifton presenting on behalf of the Committee

The Committee

as appointed by the Planning Commission on 5-26-15

- Karen Walters – Chair
- Mike Kaplan – Secretary
- Mary Booth – Resident participant
- Bill Clifton – Resident participant
- Dee Holody – Elected official participant

The Committee was also assisted by:

- Chris Weigand – Resident
- Greg Canda - Resident
- Charles Uray – Village Engineer

Committee assignment

Research - Report - Recommend

- Understand current wastewater situation
- Investigate technology options
- Investigate funding options
- Report our findings to Planning Commission
- Submit recommendations to Planning Commission

Research activities

- **Held public meetings every two weeks from inception**
- **Initial meetings with**
  - Summit County Department of Environmental Health
  - Ohio EPA – Northeast Region
- **Toured technologies & Villages similar in size** (# residencies)
  - 7/21/15 – Old Trail School, Bath OH – Living Machine
  - 8/06/16 – Hudson Estates Mobile Park - Conventional Aeration
  - 8/24/15 – Christiansburg ,Ohio - STEP system
  - 9/24/15 – Coolville, Ohio – Decentralized STEG System
  - 11/19/15 - McFarland Creek Membrane Process Module
- **Connected with**
  - EPA - Financial Assistance Program
  - Ohio Department of Administrative Services - Local Government Innovation Fund
  - USDA Rural Community Program – Services & Process Standards

Conclusions and Recommendations

✓ Regulatory

- Ohio EPA's starting point – baseline is installation of a wastewater collection system and connection to an existing treatment facility.
- Voluntary compliance is best option for the Village
  - Greater flexibility in designing and financing system
  - Avoid negative consequences of a "Mandate" to comply (Clinton, Ohio)
  - Reduce likelihood of a third party intervention

Conclusions and Recommendations

Regulatory continued

- Summit County and Ohio EPA - stated preferred option is:
  - Connection to existing wastewater collection and treatment system because…
    - Fewer entry points of processed water into watershed
    - Less monitoring of maintenance and operation of wastewater systems.
- **BUT….Ohio EPA will consider other options that are demonstrated to comply with clean water regulations.**

Conclusions and Recommendations

✓ Process – Initiate with an RFQ

The Village should utilize the USDA Rural Community Assistance Program (RCAP) template to initiate an **Request for Qualifications** (RFQ) process to select an engineering firm for the purpose of conducting a **Preliminary Engineering Study**

- Used successfully by other communities similar to Peninsula
- Provides access to public funding sources
- It is a well defined process recognized by the Ohio EPA and other government agencies
- Minimal cost process

Conclusions and Recommendations

Process continued

Select an Engineering Firm

- Select the engineering firm to conduct the Preliminary Engineering Study
  - Qualitative selection process conducted by a Village panel
  - Candidates must demonstrate successful project management of small scale wastewater systems and ability to secure sources of public funding for such systems.

Conclusions and Recommendations

Process continued

Conduct Preliminary Engineering Study to evaluate:

- **Baseline System**
  - Connection to an existing treatment plant
- **Alternative Solutions**
  - Stand-alone Conventional Gravity/Aeration systems
  - Decentralized installations
  - STEP/STEG systems
  - The Living Machine
  - Other “closed system” technologies for wastewater treatment
- Engineering firm should evaluate and recommend a wastewater collection and treatment system based upon conditions in the Wastewater District and the availability of public funding.
- **Approx. cost of Study: $50,000-$75,000**

Conclusions and Recommendations

- ✓ **Project Time Line**
  - RFQ and Preliminary Engineering Study – 12 months
  - Engineering and Design – 18 months
  - Construction – 18 to 24 months

  - **TOTAL Project Timeline – 4 to 5 Years**

Conclusions and Recommendations

Wastewater Collection Systems

- Both gravity and STEP collection systems should be evaluated to determine:
  - Least excavation damage
    - STEP (Christiansburg)
      - Small diameter directionally drilled piping
      - A pump at each residential and commercial collection tank provides power to move wastewater to treatment facility
    - Gravity (Hudson Estates and Coolville)
      - Conventionally excavated, large diameter pipes, & lift stations
  - Least connection costs to users
  - Potential mix of gravity and STEP depending on topography

Conclusions and Recommendations

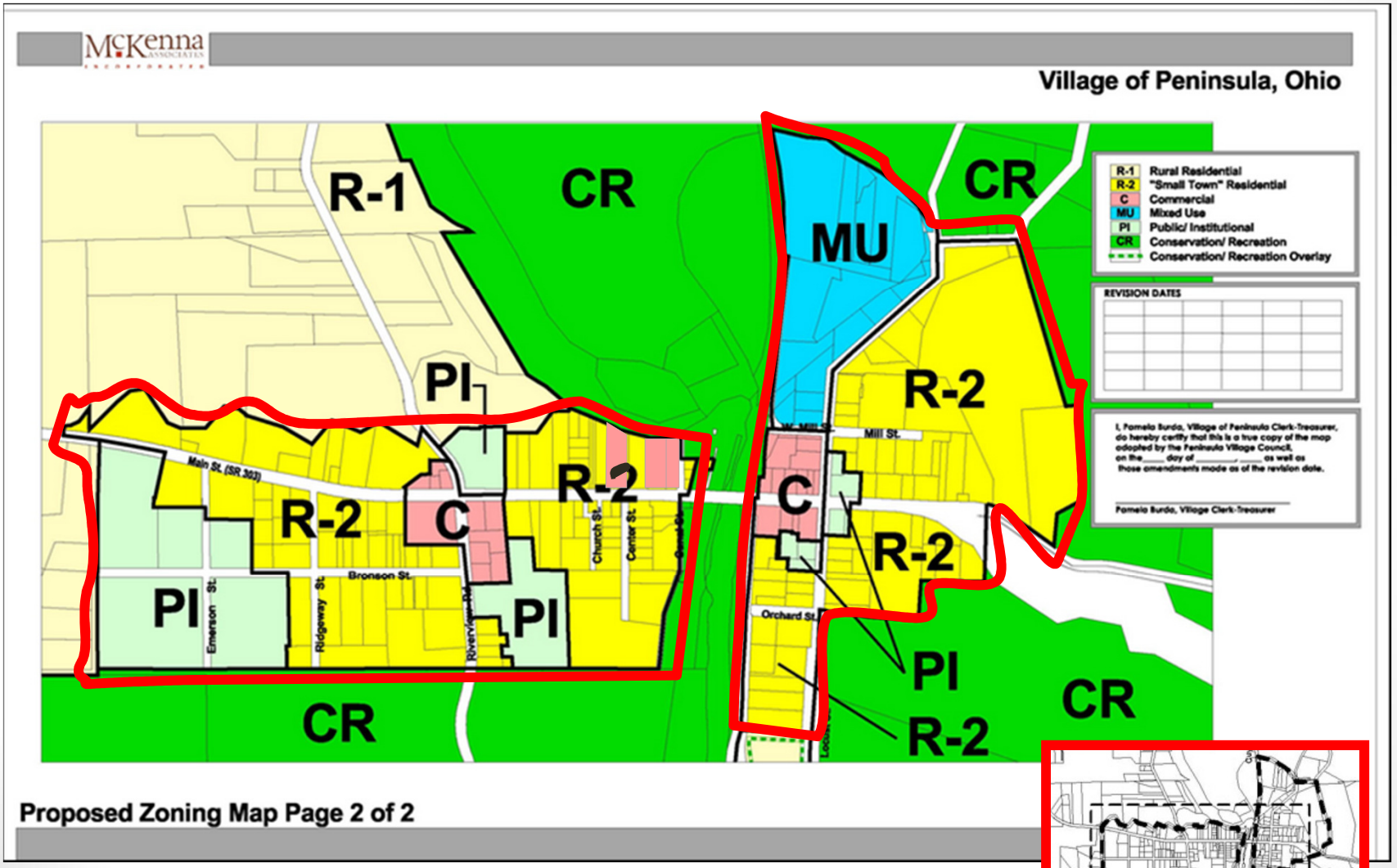
Wastewater Treatment Systems

- Alternative systems are modular and can be scaled to serve a village the size of Peninsula.
- More than one system can be installed to accommodate the topography of Peninsula (a "Decentralized" system)
- Treatment and Collection systems can be "mixed-and-matched" based on the needs and topography of the Village

Village Wastewater District

- As established in the 2005 LRP
- Use as a starting point for the Preliminary Engineering Study
- Land use and footprints have remained the same
- Starting point for consideration and refinement
  - Small-lot residential – R2 *approx. 100*
  - Small shops /commercial - C *approx. 20*
  - Public Institutions – PI *approx. 10*
  - Multi use - MU *West side of N. Locust – less than 20 parcels*

Village Wastewater District



Technology Considerations

Conventional Collection and Processing

- Summit County Analysis & Options report
- Hudson Estates Mobile Park - Conventional Aeration
- McFarland Creek Membrane Processing

Alternative Collection and Processing

- Village of Christiansburg - STEP system
- Village of Coolville - Decentralized STEG
- Old Trail, Bath OH - Living Machine

Summit County Report

Dept. of Environmental Services

Options "off the table"

- **City of Akron** – no pipeline capacity to accept Peninsula
- **NEO Regional Sewer District** - not feasible due to its distance from Peninsula.
- **Cuyahoga Falls** - predicated on a sanitary sewer extension on State Road, which has not been implemented.

Summit County Report

Department of Environmental Services

Options suggested

1. **Connect to Summit County Collection System**
   - Construction of a gravity sewer collection system
   - Connect via Camp Butler to Quick Rd, SE to State Rd.
   - 390 ft. difference in elevation between Peninsula and the Summit County system
   - requires 6 pump stations
   - approximately 30,000 ft. of force main
   - approximately 13,000 ft. of gravity sewer

2. **Construct a Village Wastewater Treatment Plant**

Recent News: Effective 1/01/2016, Summit County will assume control of the Hudson Sewer System.

Conventional Aeration Plant

Hudson Estates Mobile Park, Boston Twp., OH

STATS:

- Serves 200 mobile homes
- Maintenance:
  - 3rd party operator. 3 days/week for 30 min. $600/month
  - $500 every 6 months to empty sludge collection tank

PRO's

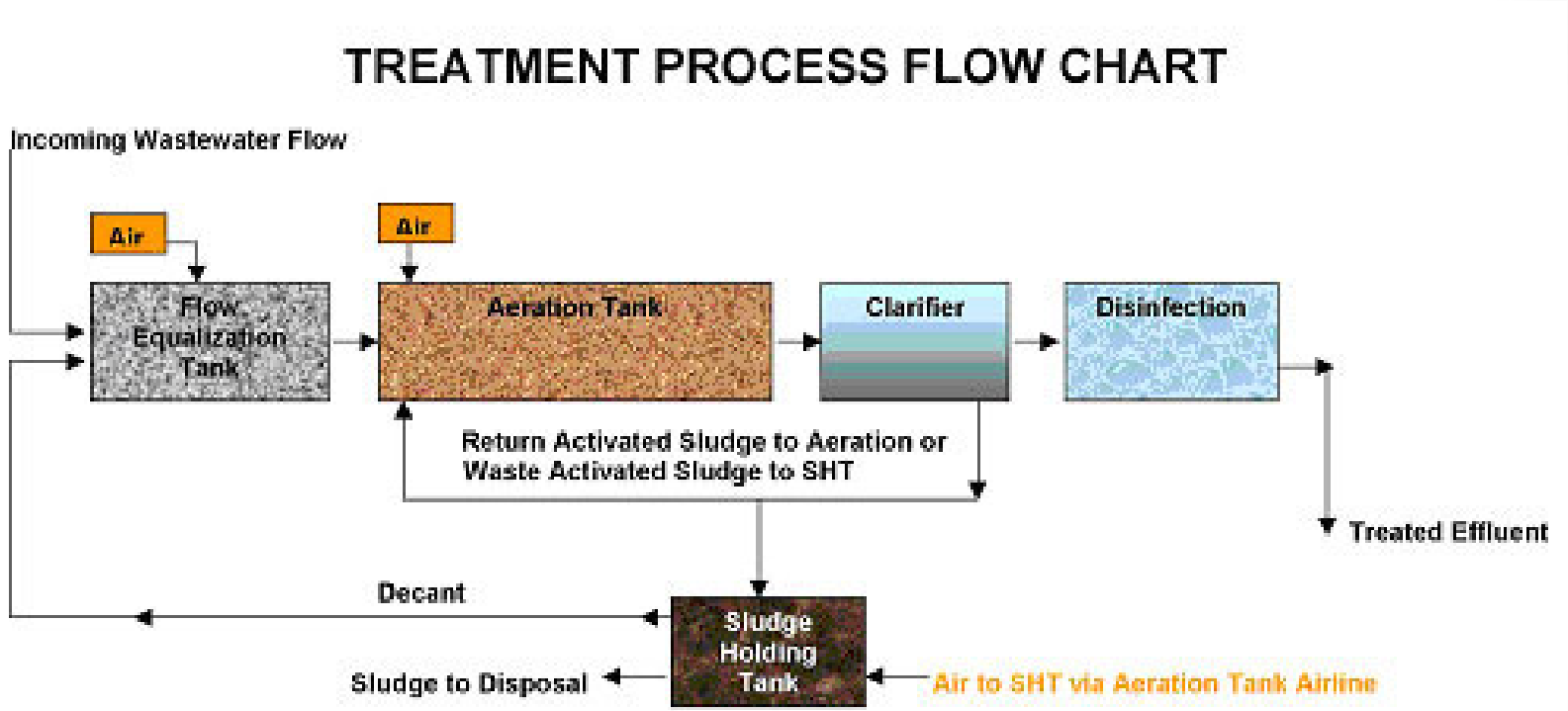
- Manageable footprint
- Scalable to Village requirements
- Proven technology – used for the last 100 years

CON's

- Requires construction of a gravity collection system (pumps, force main, gravity sewer line)
- Noise – air compressors are loud
- Sand filter pits need regular raking and maintenance
- Replacement of sand is expensive – specialty product
- Odor – open air system had a noticeable odor
- High energy usage to run the plant

Conventional Aeration Plant

Hudson Estates Mobile Park, Boston Twp., OH



Conventional with Membrane Processing

McFarland Creek Plant, Geauga County

STATS:

- 1.5 million gallons/day
- Maintenance:
  - 24-hour skilled labor required

PRO's

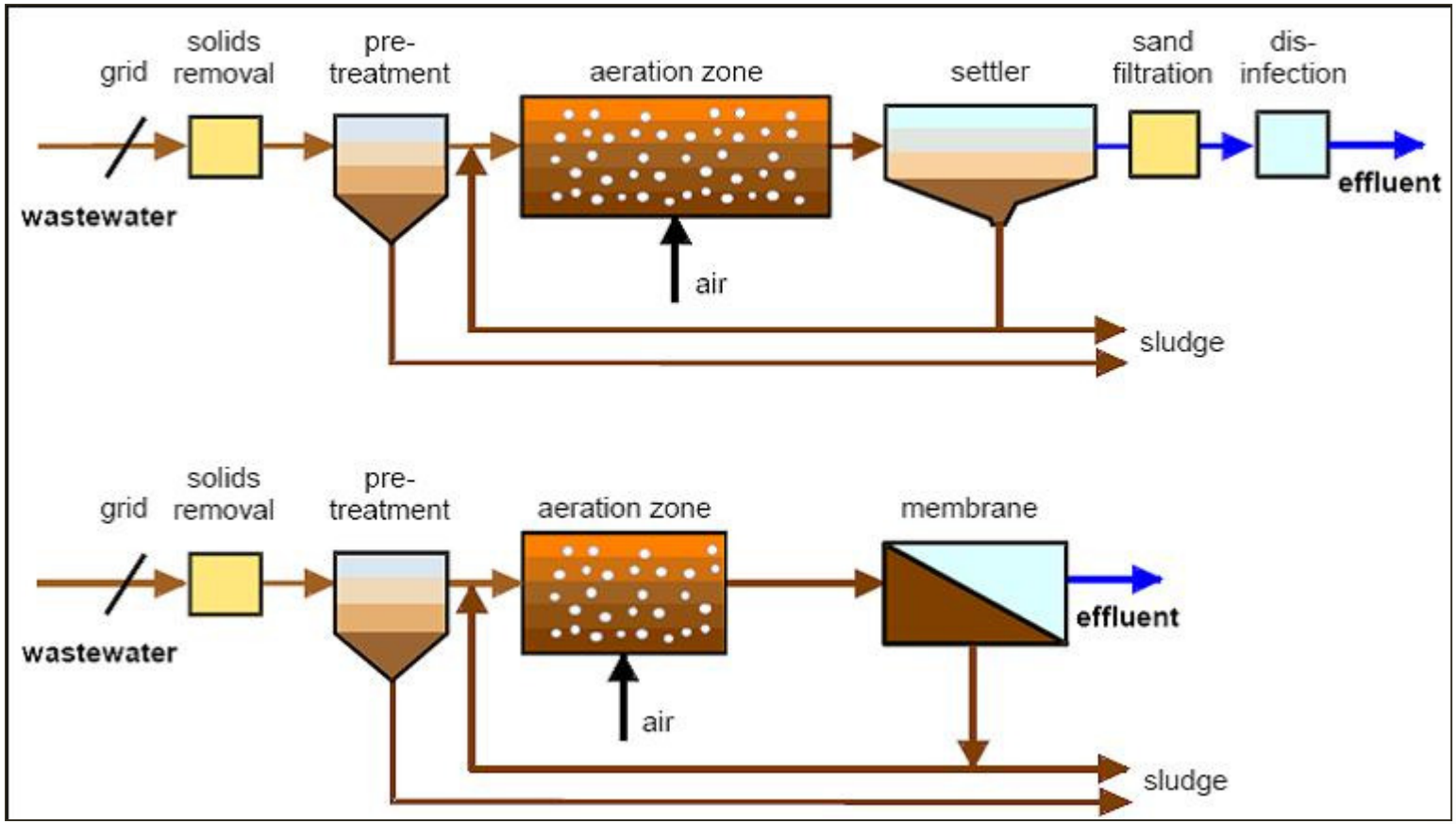
- Can increase existing capacity while not increasing footprint
- When it works – it works really well
- Accommodates a small footprint
- Can expand if needed by adding individual "trains" of membrane modules

CON's

- Best application is for retrofits – expensive infrastructure
- Requires skilled and constant maintenance
- Replacing failed membranes is very expensive ($20,000/module)
- Easily damaged
- Odor – open air system had a very noticeable odor
- High energy usage to run the system

Conventional with Membrane Processing

McFarland Creek Plant, Geauga County



MBR Benefit:

- superior effluent quality compared to conventional techniques.
- Safe discharge into streams and rivers (note: may still require UV treatment)

Conventional with Membrane Processing

McFarland Creek Plant, Geauga County

Septic Tank Effluent Gravity

"Decentralized" STEG , Coolville, OH

STATS:

- Serves 246 households, population 534 ,
- Median household income $27,500
- Maintenance:
  - 3rd party operator. 1 day/week for 1-2 hrs.
  - Main sludge collection tank needs to be emptied every 8-10 years

PRO's

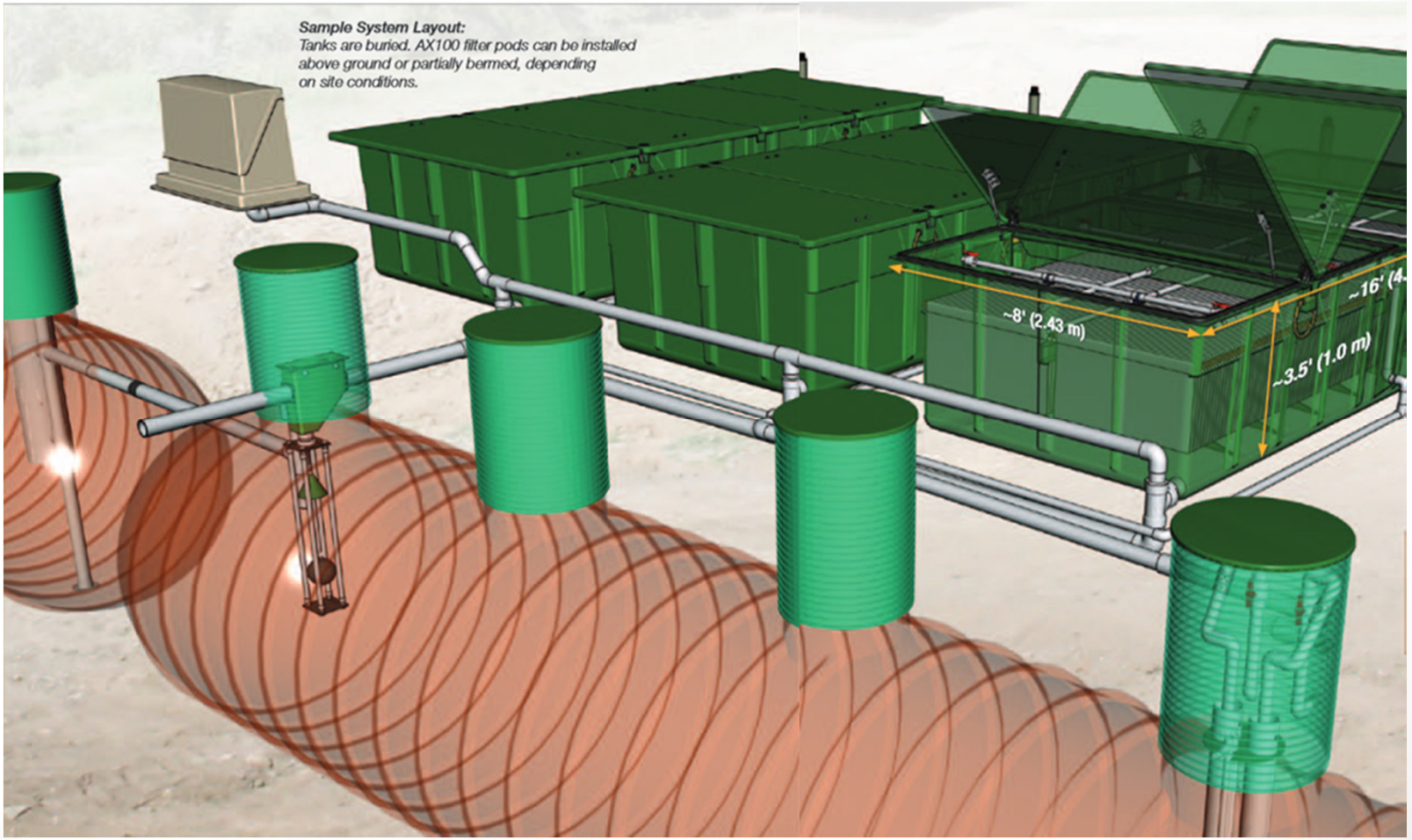
- Flexibility in design for placement of processing plants
- Adaptable to challenging terrains or conditions
- Processing plants are small footprint
- No odor – completely covered
- Quiet operation
- Low energy usage to operate

CON's

- Construction of a gravity sewer collection system (pump stations, grinders, main collection lines)
- Disruption during construction – "we fileted open all the streets"

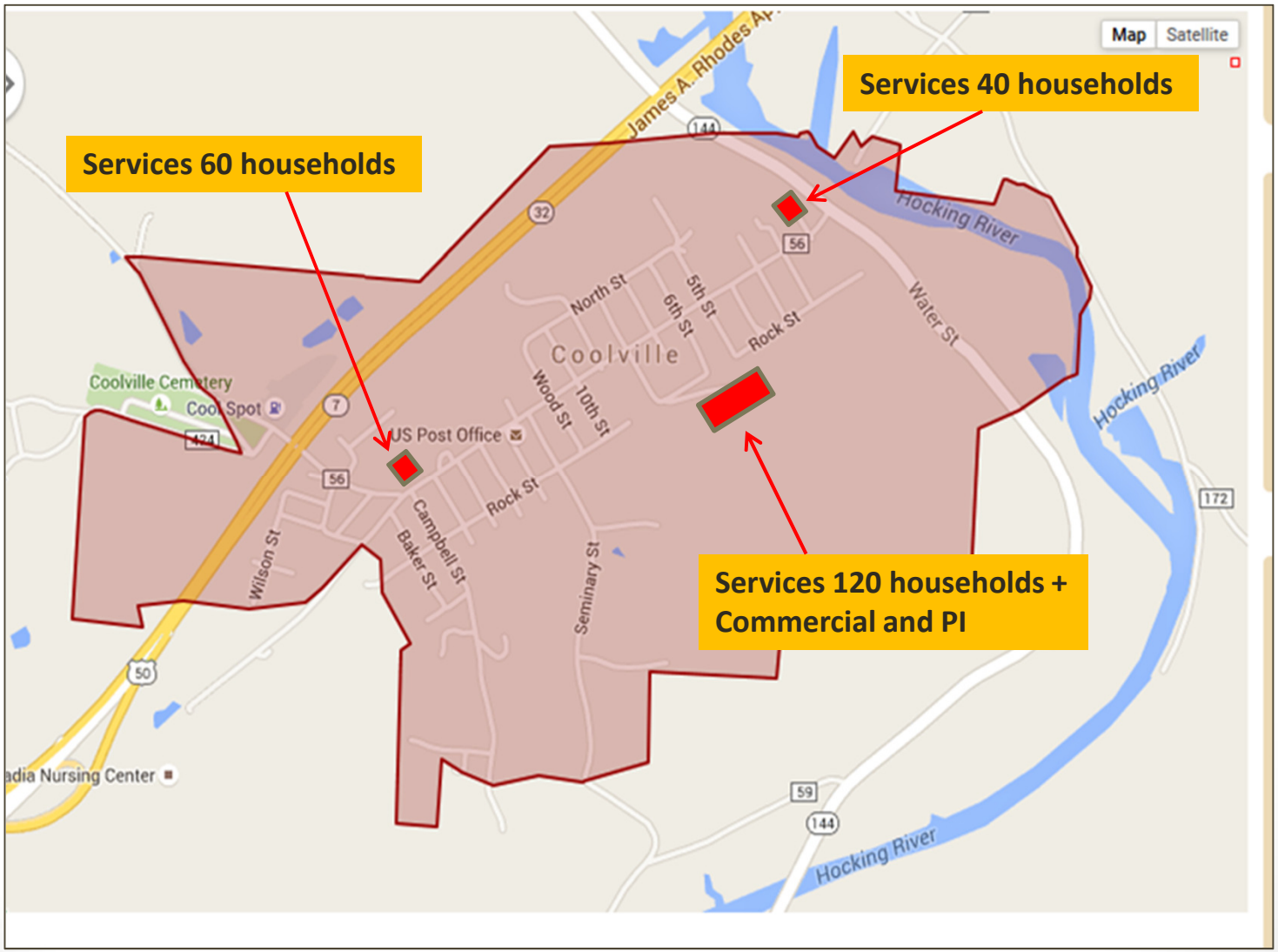
Septic Tank Effluent Gravity

"*Decentralized" STEG , Coolville, OH*



Septic Tank Effluent Gravity

"Decentralized" STEG , Coolville, OH



Septic Tank Effluent Gravity

"Decentralized" STEG , Coolville, OH

Septic Tank Effluent Pumping

Village STEP System, Christiansburg, OH

STATS:

- Serves 217 households, population 526 , as of 2010
- Median household income was $31,667 at 2008-2012
- Maintenance:
  - 3rd party operator. 1days/week for 1-2 hrs.
  - Sludge collection tank needs to be emptied every 5-6 years

PRO's

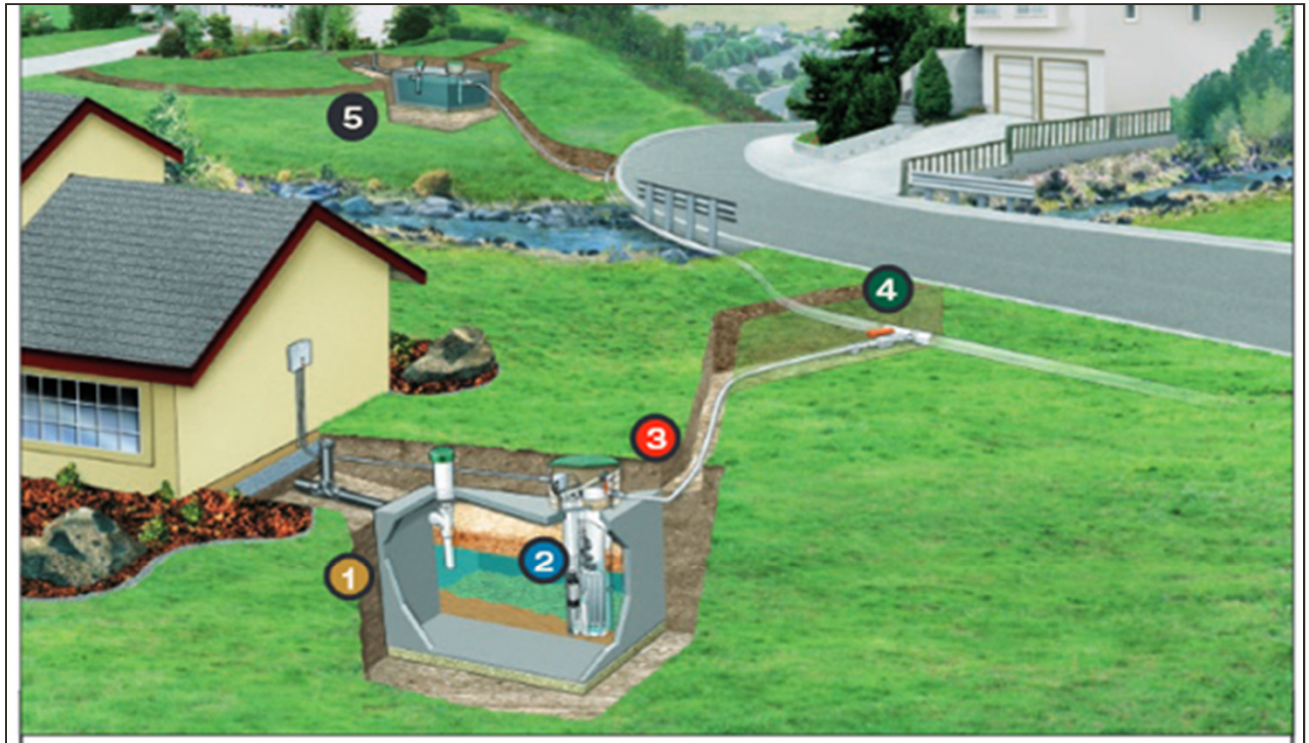
- Only moving liquids, "effluent"
- Trenchless technology to install 1.5-inch effluent collection pipe
- Greatly reduces cost for customer hookup
- Processing plant is small footprint – approx. 1 acre for handling 60,000 gal/day
- Scalable to accommodate growth – add a pod.
- No odor – completely covered. Quiet operation.
- Low energy usage to operate

CON's

- A 1000 gallon tank with pump system installed in every yard
- Village easement on every property since the Village owns the collection tank
- Every house needed landscaping

Septic Tank Effluent Pumping

Village STEP System, Christiansburg, OH



1. *Watertight tanks provide primary treatment, so only liquids are conveyed to the treatment plant.*
2. *Our patented Biotube® Pump Vault filters out solids, and our lightweight, non-corroding pumps last more than 25 years.*
3. *One-inch (25-mm) diameter service lines can be easily installed with a trencher.*
4. *Small-diameter main lines follow the contour of the ground, saving excavation costs. No expensive manholes or lift stations are required.*
5. *Filtered effluent is conveyed by gravity from homes at higher elevations, so no pump is typically required.*

Septic Tank Effluent Pumping

Village STEP System, Christiansburg, OH

Septic Tank Effluent Pumping

Village STEP System, Christiansburg, OH

Christiansburg incorporated a new Service Garage into their design to house the System controls, and their Village maintenance department.

Wetland Living Machine®

Old Trail School , Bath, OH

STATS:

- Serves 500 students and 40 staff
- Maintenance:
  - 3rd party operator. 1day/week for 1-2 hrs.
  - 5000 gallon sludge collection tank needs to be emptied every 5 years

PRO's

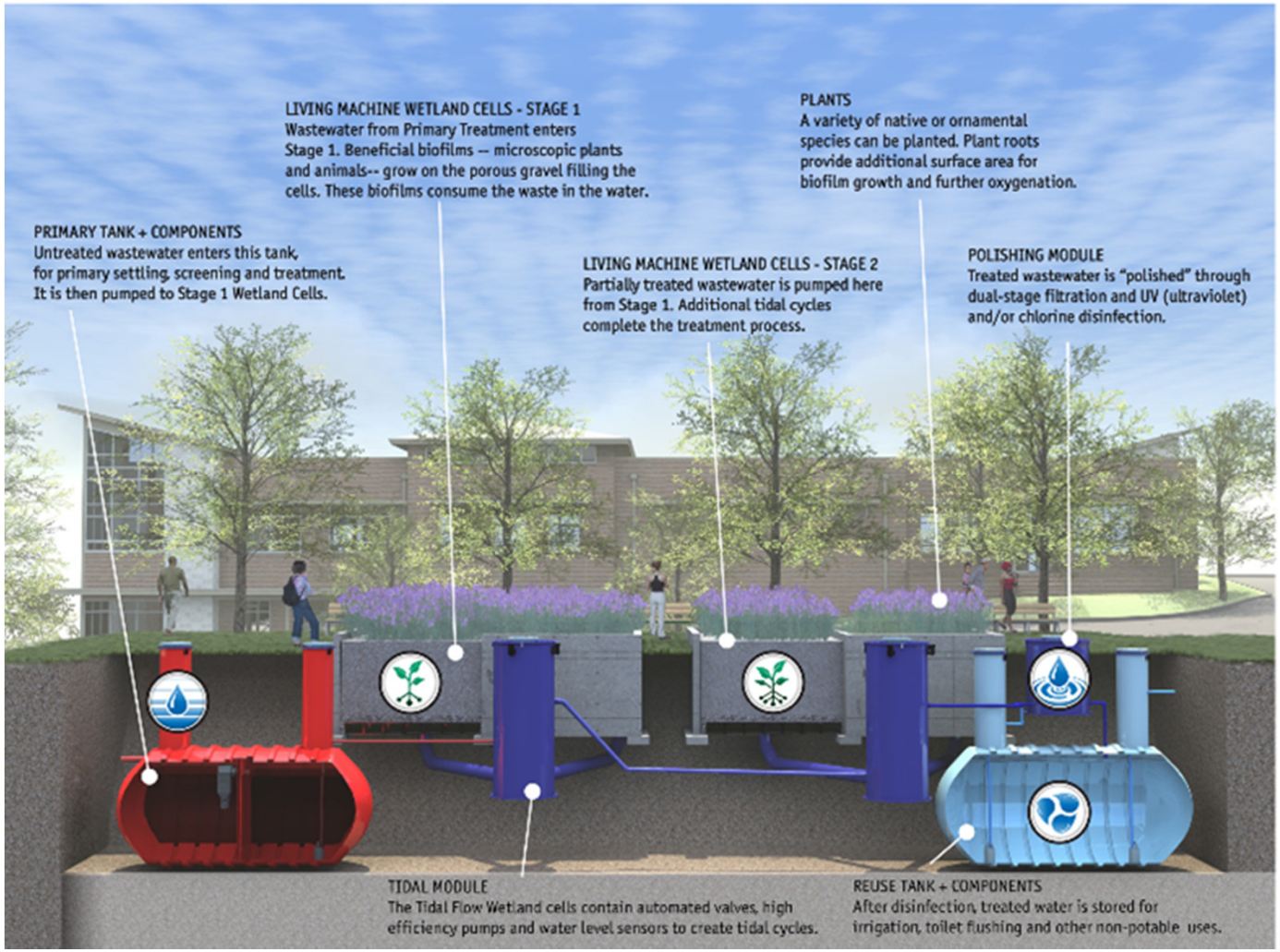
- Clean and Quiet
- No odor near wetlands or in greenhouse
- Visually appealing and interesting
- Fits more easily into the natural environment
- Low energy usage to operate
- Could be used for educational purposes

CON's

- Only applicable to processing the effluent
- Innovative approach which may require more evaluation

Wetland Living Machine®

Old Trail School, Bath, OH



Wetland Living Machine®

Old Trail School, Bath, OH

Funding options

State and Federal Funding Streams

- **USDA Rural Community Assistance Program – Grant $**
- **Ohio Local Government Innovation Fund – Grant $**
- **EPA Financial Assistance - Loan $**
- **Army Corp of Engineers – Grant $**
  Technical planning assistance for wastewater projects in rural communities.
- **Dept. of Commerce's Economic Development Administration – Grant $**
  Grants for a Community that has experienced or is about to experience a special need arising from sudden and ***severe changes in economic conditions****. (WSD/GD)*
  http://www.gao.gov/assets/670/668743.pdf

Other funding partners

- Summit County
- CVNP - Canal Corridor/Cooperative Agreement
- Key Stakeholders
- Our Community – (initiate a small monthly sewer fee now to help fund this initial work)

In Summary

Committees' recommended next steps

- Employ the USDA RCAP template and process, and release Request for Qualifications to vet Engineering firms – ***1st Qtr 2016***
- Employ the USDA RCAP program to conduct the Income Survey to qualify for USDA funding grants – ***1st Qtr 2016***
- Seek funding for Preliminary Engineering Study – ***2nd Qtr 2016***
- Continue outreach with Key Stakeholders – ***1st & 2nd Qtr 2016***

There is still work to do!!

The Wastewater Advisory Committee should continue with:

- Investigating alternatives – Hudson system & Cuyahoga Falls Rt.8 extension
- Drafting the RFQ *(already drafted)*
- Drafting Funding Proposals *(EPA Financial Assistance for Preliminary Engineering Report already drafted)*
- Continue to investigate funding sources
- Conduct community outreach

Questions?

Feel free to contact any of the Committee members if you have questions.

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Dee Holody: dholodypenvill@gmail.com

Karen Walters: karenwalters8423@gmail.com

Mike Kaplan: AkronLaw@aol.com

Mary Booth: marymarybooth@yahoo.com

The Wastewater Advisory Committee meets every other Monday at 5:30 pm at the G.A.R. Hall, located at the corner of Rt. 303 and Riverview Rd. Please contact Town Hall at 330-657-2151 for upcoming meeting dates.

Thank you!
Wastewater Advisory Committee